

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-51: (Currently cancelled)

52. (Original) A solar cell, comprising:

a substrate;

a conductive film disposed on a surface of the substrate, wherein the conductive film includes a plurality of discrete layers of conductive materials;

at least one p-type semiconductor absorber layer disposed on the conductive film, wherein the p-type semiconductor absorber layer includes a copper indium diselenide (CIS) based alloy material;

an n-type semiconductor layer disposed on the p-type semiconductor absorber layer, wherein the p-type semiconductor absorber layer and the n-type semiconductor layer form a p-n junction; and

a transparent electrically conductive top contact layer on the n-type semiconductor layer.

53. (Original) The solar cell of claim 52, wherein the discrete layers of conductive materials comprise:

at least one metallic layer of material selected from one or more groups comprising copper, silver, aluminum, molybdenum, and niobium; and

at least one barrier layer of a transition metal nitride material.

54. (Original) The solar cell of claim 53, wherein the barrier layer is selected from one or more groups comprising titanium nitride, zirconium nitride, and hafnium nitride.

55. (Original) The solar cell of claim 53, wherein the barrier layer comprises zirconium nitride.

56. (Original) The solar cell of claim 52, wherein the discrete layers of conductive materials comprise:

- a first layer of copper;
- a second layer of silver; and
- a plurality of barrier layers each of a transition metal nitride material.

57. (Original) The solar cell of claim 52, wherein the discrete layers of conductive materials comprise:

- a plurality of metallic layers of material each selected from one or more groups comprising copper, silver, aluminum, molybdenum, and niobium; and
- a plurality of barrier layers each of a transition metal nitride material.

58. (Original) The solar cell of claim 57, wherein the barrier layers are each selected from one or more groups comprising titanium nitride, zirconium nitride, and hafnium nitride.

59. (Original) The solar cell of claim 57, wherein the barrier layers each comprises zirconium nitride.

60. (Original) The solar cell of claim 52, further comprising:
a layer of metallic material disposed between the p-type semiconductor absorber layer and the n-type semiconductor layer.

61. (Original) The solar cell of claim 60, wherein the layer of metallic material comprises zinc.

62. (Original) The solar cell of claim 52, wherein the substrate comprises thin metallic foil.

63. (Original) The solar cell of claim 62, wherein the thin metallic foil is selected from one or more groups comprising stainless steel, copper, and aluminum.

64. (Original) The solar cell of claim 52, wherein the p-type semiconductor absorber layer has a graded bandgap.

Claims 65-80: (Currently Cancelled).